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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,740	11/29/2001	Young Wha Kim	P67355US0	1878

7590 01/10/2006

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EXAMINER

LUGO, DAVID B

ART UNIT	PAPER NUMBER
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2637

DATE MAILED: 01/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,740

Applicant(s)

KIM ET AL.

Examiner

David B. Lugo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 and 27 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/27/05 have been fully considered but they are not persuasive. Regarding claims 1 and 8, Applicant argues that Karna does not disclose completing temporary detecting when the received signal reaches the end of a symbol. The Examiner respectfully disagrees. Karna discloses that a symbol estimate is provided based on samples generated from a received signal (step 206). This step is interpreted as completing a temporary detecting and recovering of the symbol of a user. As stated by Applicant, this detection is based on a set of M samples. Those samples include at least one new symbol (para. 0035), and thus the end of the new symbol is reached (i.e. the new symbol is fully received), where the detecting and recovering the symbol is performed after the end of the symbol is received. The rejection is maintained and is restated below.

Drawings

2. The replacement drawing sheet of Figure 7 was received on 10/27/05. This replacement drawing sheet is acceptable.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Karna U.S. Patent Application Publication 2002/0196841.

Regarding claims 1 and 8, Karna discloses a method for parallel type interference cancellation in a CDMA receiver in Figure 2, where the method is preferably executed by a microprocessor having stored instructions (page 7, para. 54), comprising generating sample estimates for spread user signals (step 206) which is a temporary detecting and recovering of a user symbol and where the sample set includes at least one new completed symbol (page 4, para. 35), generating a residual signal by using the recovered signal of the user and a received signal (step 208; para. 38), and detecting symbol information by obtaining an interference cancelled signal by adding the residual signal to the recovered signal of the user (step 210; para. 39), where Figure 7 further shows that a residual signal generated from the output of subtractor 708 is added to first symbol estimates generated by first detection stage 600 via adders 712 in order to obtain specified user signal estimates 320 (see page 6, para. 50).

Regarding claims 2 and 9, Karna shows in Figure 2 that the steps of the method are repeated using the generated user signal estimates of step 210 in step 206 (page 4, para. 40).

Regarding claims 3 and 10, Karna discloses that at least one new symbol must be completely received (para. 35), and the recovered signal is obtained by adjusting the amplitude and phase of the temporarily detected signal using a channel estimate in step 206 (see page 4, para. 36).

Regarding claims 4 and 11, Karna discloses that sample estimates for user signals are summed up and subtracted from a sample of the sample set read to the interference canceling-stage (para. 37), where the residual signal sample is obtained as the difference between the

sample of the sample set and the sample estimates of all users (para. 38), and where partial symbols may be utilized and subjected to interference cancellation (page 5, para. 47).

Regarding claims 5 and 12, Karna discloses that sample estimates for user signals are summed up and subtracted from a sample of the sample set read to the interference canceling-stage (para. 37), where partial symbols may be utilized and subjected to interference cancellation (page 5, para. 47), and where the symbol is detected using a matched filtering (i.e. correlation) (para. 39).

Regarding claims 6 and 13, Karna shows in Figure 4 that the symbol lengths may be equal.

Regarding claims 7 and 14, Karna discloses that user symbols may be of different lengths (page 4, para. 35).

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

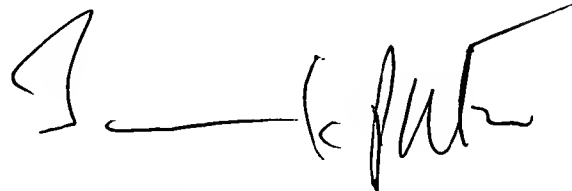
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Lugo whose telephone number is 571-272-3043. The examiner can normally be reached on M-F; 9:30-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Lugo
1/5/06



JAY K. PATEL
SUPERVISORY PATENT EXAMINER